LinuxLab Github

Unified open source by SAP Technology Partners

Markus Koch (mkoch@redhat.com)
EMEA Partner Development SAP

January 2022

Observations

- A lot of SAP on Linux related tools/code/artifacts are spread across many places
- Many forks and code, and different approaches with brilliant ideas are around
- Unclear what is stable or experimental code
- SAP Service Partners: "Can I use this code to create new offerings for customers?"
- Customers do not understand how to combine tools to reach an outcome
- too much disjointed code with no cohesion, under different open-source licenses

Our path forward

- Open collaboration on code across all SAP Technology Partners in the SAP LinuxLab

- Open discussion and debate on technology principles and solutions for SAP workloads

- Single baseline of harmonious and modular code

  - which can be extended by each SAP Technology Partner for their platform/technologies unique value

  - which can be amended/extended by each SAP Service Partners (e.g. GSIs) for their unique implementation and maintenance capabilities, offering their customers full choice
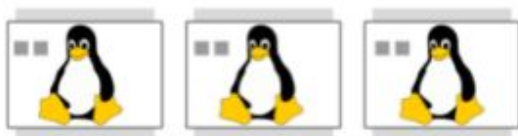
Open-source collaborations between SAP Technology Partners
=
unified tools for SAP, and happy customers

Red Hat

SAP technical tools for SAP Partners and Customers, by SAP Partners

SAP Linuxlab

A place for open source software that helps to make creating and managing SAP environments on Linux easier

Initiators

IBM Lab for SAP Solutions

Red Hat

View on GitHub

https://sap-linuxlab.github.io/
https://github.com/sap-linuxlab

Foundation Members
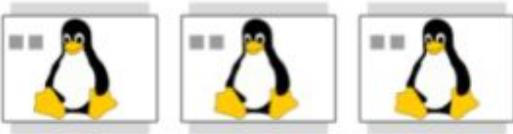
IBM **Cloud**

IBM **Consulting**

Red Hat

SUSE

SVA

Initial IBM/RedHat/SVA contributions

SAP Linuxlab

A place for open source software that helps to make creating and managing SAP environments on Linux easier

- Terraform templates for simple use cases
- Ansible collections for
  - Software Download
  - Initial Install
  - Maintenance (Day 2 ops)
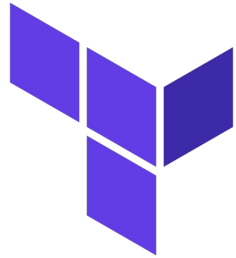- Sizing Tools
- Reference Architectures

IBM Lab for SAP Solutions

SAP technical tools with common technologies and modular structure

Terraform

Ansible

Python and Shell

Terraform templates various Infrastructure Platforms (Cloud IaaS and Hypervisors) and SAP solution scenarios:

- SAP HANA
- SAP S/4HANA 1809/1909/2020/2021 from Maintenance Planner
- SAP S/4HANA System Copy
- SAP ECC on HANA System Copy

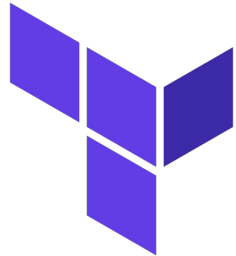**Ansible Collections for various SAP Day 0/1/2 activities:**

- OS preparation
- SAP Software downloads
- SAP Software installation
- SAP Software maintenance

Sizing Tools

Reference Architectures

	What can be done?	Technologies
Infrastructure Platform/s	Cloud IaaS: • Amazon Web Services • Google Cloud Platform • Microsoft Azure • IBM Cloud – Intel, IBM Power, VMware Hypervisors: • IBM PowerVM • KVM/OVirt • VMware vSphere	**Terraform** Modules
SAP solution scenario deployments	End-to-end deployments: • SAP HANA • SAP S/4HANA 1809/1909/2020/2021 from Maintenance Planner • SAP S/4HANA System Copy • SAP ECC on HANA System Copy	**Terraform** for scenario: --> Terraform Variables with defined Infrastructure Specifications --> Terraform Modules ----> Cloud IaaS components ----> **Execute Ansible** Playbooks
Infrastructure and OS prep. for SAP (Day 0)	Configure hosts ready to run SAP software	**Ansible** for preconfigure RHEL or SLES
Installation of SAP software (Day 1)	All SAP Software combinations (inc. HA) possible	**Ansible** for SAP hdblcm **Ansible** for SAP SWPM: --> Default (friendly Ansible Variables) --> Advanced (inifile params as Ansible Variables) --> Templates for repeatable deployments
Maintenance of SAP software (Day 2)	Various scenarios: • Setup/Run SAP HANA backups • Run SAP RFCs • Start/Stop SAP Systems (with scheduling) • Resize/Rename SAP Systems • Configure security/firewall	**Ansible** for SAP Operations
Download of SAP software	Download SAP Software: • by filename • by SAP Maintenance Planner plan name	**Ansible** for SAP Launchpad
Customer/Partner employees must learn	To use, must learn: **None** To amend/extend to match business objectives and needs: **Terraform and Ansible**	

SAP technical tools with common technologies and modular structure

Terraform

Ansible

Python and Shell
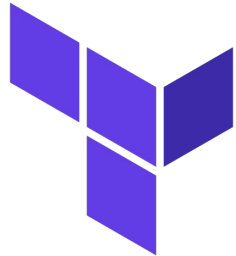
Terraform Templates and Modules:

terraform.sap_infrastructure – Terraform Templates for deployment of various SAP solution scenarios, for every Cloud and Hypervisor

Ansible Collections (containing Ansible Roles and Ansible Modules):

community.sap_launchpad – Collection of Ansible Roles and Ansible Modules for various tasks using SAP Launchpad APIs

community.sap_install – Collection of Ansible Roles for various SAP software installation

community.sap_operations – Collection of Ansible Roles for various operational tasks with SAP Systems
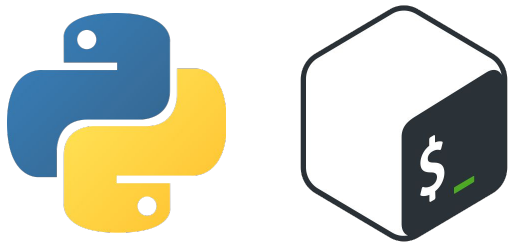
Python and Shell scripts:

tool.sap_infrastructure_actions – Scripts to perform Infrastructure actions for SAP operations (e.g. clone, resize, scheduled start/stop)

tool.sap_sizing_calculators – Calculations to assist SAP Technical Administrators in sizing decisions for designing and deploying SAP Landscapes
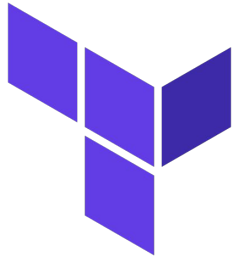
Architectures:

architecture.sap_hana – Adoption of common reference architecture for SAP HANA deployments on multiple platforms

SAP technical tools with common technologies and modular structure
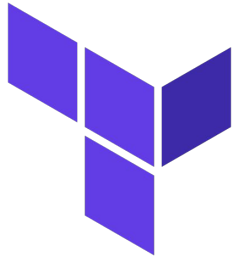
Terraform

Ansible

Python and Shell

```
[:terraform.sap_infrastructure] $ tree
├── docs
├── templates_for_sap
│   ├── sap_ecc_hana_single_node_system_copy_homogeneous_hdb
│   │   ├── aws_ec2_instance
│   │   ├── gcp_ce_vm
│   │   ├── ibmcloud_intelvs
│   │   ├── ibmcloud_powervs
│   │   ├── ibmpowervc
│   │   ├── msazure_vm
│   │   ├── ovirt_rhv
│   │   └── vmware
│   ├── sap_hana_single_node_install
│   ├── sap_s4hana_single_node_install
│   └── sap_s4hana_single_node_system_copy_homogeneous_hdb
│
├── modules_for_sap
│   ├── all
│   │   ├── ansible_sap_ecc_hana_system_copy_hdb
│   │   ├── ansible_sap_hana_install
│   │   ├── ansible_sap_s4hana_install_maintplan
│   │   ├── ansible_sap_s4hana_system_copy_hdb
│   │   └── shell_download_obj_store_ibmcos
│   ├── aws_ec2_instance
│   ├── gcp_ce_vm
│   ├── ibmcloud_intelvs
│   │   ├── account_bootstrap
│   │   ├── account_iam
│   │   ├── account_init
│   │   ├── bastion_inject
│   │   └── host_provision
│   ├── ibmcloud_powervs
│   ├── ibmpowervc
│   ├── msazure_vm
│   ├── ovirt_rhv
│   └── vmware
```

# SAP technical tools with common technologies and modular structure

Terraform

Ansible

Python and Shell

```
[:lss.sap_install] $ tree
├── docs
├── meta
├── playbooks
│   ├── sample-sap-swpm-advanced-mode.yml
│   ├── sample-sap-swpm-advanced-templates-mode.yml
│   ├── sample-sap-swpm-all-modes-interactive.yml
│   ├── sample-sap-swpm-default-mode.yml
│   ├── sample-sap-swpm-default-templates-mode.yml
│   ├── sample-sap-swpm-inifile-reuse-mode.yml
│   └── vars
├── plugins
│   ├── module_utils
│   └── modules
├── roles
│   ├── sap_general_preconfigure
│   ├── sap_ha_install_hana_hsr
│   ├── sap_ha_install_pacemaker
│   ├── sap_ha_set_hana
│   ├── sap_ha_set_netweaver
│   ├── sap_hana_install
│   ├── sap_hana_preconfigure
│   ├── sap_hostagent
│   ├── sap_install_media_detect
│   ├── sap_netweaver_preconfigure
│   ├── sap_storage
│   └── sap_swpm
└── tests
```

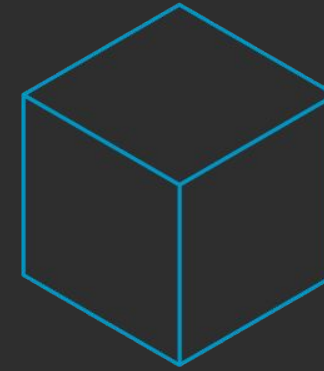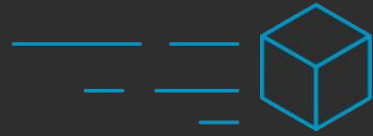# SAP technical tools with common technologies and modular structure
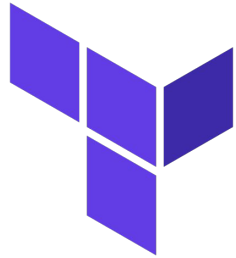
Terraform

Ansible

Python and Shell

```
[:sap_sizing_calculators] $ tree
├── sap_benchmarks_bwh_directory.py
├── sap_benchmarks_sd_directory.py
├── sap_hana_hardware_directory_iaas.py
├── storage_sap_hana_scaleout.py
├── storage_sap_hana_scaleup.py
├── storage_sap_nwas.py


[:tool.sap_infrastructure_actions] $ tree
├── sap_onehost_clone_instance_rename
│   └── ibmcloud_intelvs
│       ├── ansible_playbook_shutdown.yml
│       ├── import_generic_functions.sh
│       └── run_clone_ibmcloud_intelvs.sh
├── sap_onehost_resize_instance
│   └── ibmcloud_intelvs
│       ├── ansible_playbook_start.yml
│       ├── ansible_playbook_stop.yml
│       ├── import_generic_functions.sh
│       └── run_resize_ibmcloud_intelvs.sh
└── sap_scheduler_startstop
    └── ibmcloud_intelvs
        ├── Dockerfile
        ├── docker_cmd_start_stop.sh
        ├── import_generic_functions.sh
        └── run_scheduler_setup_ibmcloud_intelvs.sh
```

Red Hat

Thank You !

https://linkedin.com/company/Red-Hat

https://facebook.com/RedHatinc

https://youtube.com/user/RedHatVideos

https://twitter.com/RedHat

SAP Platinum Partner